WOMEN IN SCIENCE

ENSURING A STRONG SCIENTIFIC WORKFORCE FOR THE FUTURE

SECRETARY RICHARDSON'S INITIATIVES

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America's unprecedented prosperity is fueled by the nation's science, engineering and technology (SET) enterprise. Acute skill shortages in every part of the Country, however, threaten the foundation of American competitiveness. The US workforce is losing a large percentage of workers to retirement or death, is growing more slowly, will lack highly skilled workers, is becoming more diverse, and will contain more women. Over the next two decades, the US workforce will evolve to 50 % women and 33% minorities. Women and minority group members traditionally are not trained to develop technological skills which will be required to sustain the new economy. Only 9% of current jobs requiring engineering skills and 10% requiring a physics background are filled by women. The percentage of minorities is much smaller.

Towards this end, Congress established the Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development. The Commission was charged with setting forth recommendations to help build a domestic workforce capable of meeting the nation's strategic SET needs. The Commission's report, which is currently being published, recommends policies and programs that:

< Advance the participation of all Americans in SET education;
< Increase the number of qualified American scientists and engineers by expanding the talent pool to include more women, minorities, and persons with disabilities.

The enclosed table summarizes the CAWMSET recommendations.

Secretary Richardson has created an atmosphere of inclusion by hiring, promoting and retaining employees of all races and genders and people with disabilities. Since his appointment:

< Two-thirds of political appointees hired or promoted have been women or minorities; in all, 45 percent have been women;
< Of the ten career field managers named during the Secretary's tenure, six have been women;
< The appointment of the first woman director of a major multi-program national laboratory in the history of the Department has been made-Dr. Lura Powell, Director of PNNL;
< The percentage of women in Senior Executive Service (SES) positions has increased by 46% during the Secretary's tenure;
< The use of the excepted service has attracted the first two women in High Energy Physics to the Department;

- During the summer of 2000, the Department hired 53 students for the technical summer intern program, of which 58% were women;
- Over the last two years, the Department has filled over 50% of career development program opportunities with women;
- Expanded quality of work life initiatives including flexible work hours and work place, child care programs, job sharing and part-time schedules, health and wellness programs, and career development and transition centers have been implemented.

In response to the Commission recommendations, the following initiatives will be undertaken as the next steps to ensure that the DOE complex will have a strong scientific workforce for the future.

SCIENCE EDUCATION

Background:
The Department's science education program includes fellowships, internships, and the Science Bowls to encourage young people to pursue scientific careers. The Department's school programs, which provide access to the DOE National Labs, offer opportunities and facilities for teachers and students to enhance and apply their skills and knowledge.

For example, the Department's Community College Initiative provides students from groups under represented in technical fields, direct exposure to scientific research facilities for 10 weeks in the summer. In 1999, of the 107 participants, 45% were women and 38% minorities. A pilot project initiated last year by the Department and the National Science Foundation utilizes the DOE National Labs in training college students preparing for a teaching career. A coalition of 17 universities provided 35 student candidates and 17 teachers access to a hands on science experience at six DOE labs for 10 weeks.

The challenge for the Department is how best to leverage the unique assets of the National Labs research enterprise and the available dollars for improving public scientific and technical literacy, including a fundamental change in the teaching culture. One project tested at Bates Laboratory provided flexibility within the work environment supporting duel careers – part time researcher or technician in a laboratory and part time teacher in a high school or community college. This approach provided a conduit for access to promising students and elevated the teachers to professional scientist status.

The objectives of the Department's Science Education Program are three fold: use student internship experience as an opportunity to recruit future employees, use the National Lab facilities as opportunities to encourage students to pursue scientific careers, and for enhancing teaching approaches in Science and Mathematics.

Proposed Actions:

< **Collaborate with the National Science Foundation** in order to provide the scientific and education foundation to achieve the national education goals. **Establish a high level working group within sixty days**. **Strategically determine the role of the National Labs** for hands-on science education and training and evolve the next set of programs.

< **Establish a Science Education Partnership Working Group**. This Group, comprised of representatives from the Labs, Program & Field Offices and Sites within the DOE complex, will provide an opportunity for sharing best practices, lessons-learned and input on policy issues related to science education. The Working Group will **report to the Department's R&D Council.**

RECRUITMENT AND PROMOTION

Background:

The DOE complex has a workforce of approximately 120,000 of which about14,500 are federal employees. Currently the DOE federal workforce in technical areas includes 15% women and 17% minorities. The contractor workforce at some facilities has a slightly higher percentage of professional women in the workforce. With the aging workforce at both the DOE and laboratories, and the changing demographics in the US, it is critical to include women and minorities in the technical skill areas needed to ensure availability of a strong scientific workforce for the future.

Currently, a number of initiatives and programs are being developed addressing recruitment and career development, but they need greater coordination and may be insufficient to address issues that are facing the Department. The greatest challenge will be for the DOE complex to be competitive with the private market in acquiring necessary critical skills.

Proposed Actions: Six Point Plan for the Hiring and Advancement of Women in Science

I. Establish Greater Management Accountability:

< **Establish a "Report Card" or data base system** for Laboratories, Facilities, and Program Offices to include a review of progress made in **removing barriers for equal opportunities for the workforces**, particularly in the areas of science and technology and in entry-level hires in critical mission areas. **Finalize a matrix** illustrating the percentage of women in technical and managerial positions across the complex **within 60 days**. Review results at the quarterly DOE meetings with Lab Directors and DOE management meetings, address issues, and develop action steps that should be taken to improve progress. Maintain an ongoing data base.

II. Partner with Office of Personnel Management, OMB and Congress to Obtain Needed Authorities to Increase the Competitiveness of DOE with the Private Sector:

< **Partner with OPM on applying quick, flexible approaches** for hiring highly qualified employees in mission critical science positions **which can greatly shorten the time required** to process the job offer.

- **Increase recruitment, relocation and retention bonuses greater than current authority.**. (OPM recently drafted a legislative proposal to give agencies this authority)
- **Working with OPM,** obtain approval of a demonstration project to establish pay banding flexibility and a **skills based pay system** consistent with the knowledge and contributions of critical scientific and technical personnel.

III. Undertake Aggressive Outreach and Recruitment for Scientific and Technical Federal Positions

- The **R&D Science Retention Initiative** has identified **50 R&D Managers Positions** that are critical for the Department to fill. **Aggressively eliminate barriers to recruiting and retaining women**, minorities and other highly qualified people to fill these positions. **Establish and train a recruiting team/network of prominent technical employees** to conduct outreach and other activities to attract the best talent available.
- Use excepted service hiring authority to maximize flexibility and targeted recruitment capability. Approve a policy that will pay referral bonuses to employees who refer job candidates selected into critical scientific positions.

IV. Establish **Succession Planning/Executive Development Programs** for Senior Level Federal Employees:

- **Initiate a Pilot Succession Program** /SES Development Program that will identify potential leaders within the DOE. **Provide career development mentoring and coaching** and develop job assignments including those to Laboratories that will provide opportunities for growth. Aggressively minimize the barriers that tend to exclude women and minorities. **Within three months, provide opportunities for 15 candidates.**

V. **Significantly Increase Federal Entry Level Hiring and Rebuild the Pipeline:**

- Starting in FY 2001, 15% of new hires into technical positions will be made at the entry level. The Offices of Science, Defense Programs and Environmental Management **will fill at least seven Technical Leadership Development Program intern** positions in Scientific and Technical areas.

VI. Examine Alternatives for Providing Greater Financial Incentives for Highly Skilled Personnel within the DOE Lab Facilities:

- **Explore with the Lab Directors creative approaches to improve the competitiveness in recruiting for highly skilled scientists**. Benchmark against industry and determine impacts of salaries and financial packages. Assess a variety of programs including the effectiveness of **entrepreneurial leave programs similar** to the Sandia National Laboratory program, or consider greater financial returns for employees in developing intellectual property in attracting and retaining key personnel.

ENSURING WOMEN ARE SUCCESSFUL

Background:
Barriers to women in advancement and retention in scientific careers include isolation, absence of female role models, risk averse supervisors, stereotyping, differences of style, and conflicts in balancing work and life demands. Women have a higher dropout rate in engineering colleges. At one of the Department's laboratories, a survey indicated that women dropped out of management positions at four times the rate of men and that females have been less likely to fill senior management positions. However, women who were mentored and coached in a supportive environment appeared to have thrived. Actions need to be taken to ensure that all our managers can become successful. For women, who are assuming roles where no women have gone before, adequacy of support for success must be examined.

Proposed Actions:
The Department and its Laboratory Directors and Field Managers should address the following approaches to supporting the development of our workforce:

- Re-evaluate the Department's training programs and **establish formal training program for volunteer mentors**;
- Develop a **process for ensuring that the barriers to equal opportunity have been lowered allowing all employees to more fully participate in a cross section of Departmental activities** to gain experience and knowledge necessary to assume more responsible positions, including research teams, project management reviews, contractor selection panels, technical personnel selection panels, and training programs.

WORKPLACE IMPROVEMENTS

Background:
Secretary Richardson has been committed to and has been personally involved in the improvement of the Department's workplace for employees. The Secretary holds town meetings and "brown bag" luncheons on a regular basis to listen to, and interact with, employees in an effort to identify those work/life programs that need to be addressed.

Corporately, DOE has a comprehensive and innovative family-friendly workplace program and has been on the leading edge of implementing programs within the Federal government, particularly in the areas of child care, alternative work schedules, flexiplace, and transportation benefits. The quality of the workplace will become increasingly more important in order to maintain the highest level of productivity and morale, to retain a highly-qualified workforce, and to assist employees in coping with balancing their work and personnel needs.

However, issues remain as to requirements at specific locations and the conflicts between needs and very limited resources with continuing pressures for reduction of overhead costs. In some locations, there are conflicts between funding jobs or benefits.

Proposed Actions:

- **Hold quality of life forums** at DOE facilities and undertake surveys to provide feedback on issues, needs and priorities of workplace programs;
- Complete **benchmark assessments** on quality of workplace programs with **local and national industries.**
- **Create a database and establish a baseline of the top work and family programs** at each site with the objective of addressing workforce issues. Address issues, requirements, and priorities of funding at DOE management and Lab Directors' meetings;

LEADERSHIP FOR ENSURING A STRONG SCIENTIFIC WORKFORCE FOR DOE

To address the ongoing issues with maintaining a strong technical workforce for the DOE complex and to implement the recommendations of this effort, clear delineation of roles and responsibilities must be established.

- The **Undersecretary** for Energy, Science and the Environment **will be responsible for providing leadership in addressing the scientific workforce programs.**
- Workforce programs will have focus on Lab Directors, the COO Council, Field Managers and Field Management Council agendas.
- Staff support will be assigned from the Office of Management and Administration.